

# Mineral Industry Surveys

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## SULFUR IN DECEMBER 2004

During the month, production of recovered elemental sulfur was 817,000 metric tons, according to the U.S. Geological Survey. December production was 5% higher than that of November 2004 and slightly higher than that of December 2003. Shipments were 9% higher than those of November 2004. Producers' ending stocks for December 2004 were 190,000 tons.

Import and export data for December 2004 were not available at the time of publication and will be published in the Sulfur in January 2005 Mineral Industry Surveys along with apparent consumption. Imports of recovered sulfur for November 2004

were estimated to be 186,000 tons; exports were 31,000 tons. Imports of sulfuric acid for November 2004 were 218,000 tons; exports were 20,000 tons.

Significant adjustments have been made to the sulfur import data. Reports from the U.S. Census Bureau appear to underreport sulfur imports, especially material from Canada. The revised figures are based on Census information and data from personal communications with industry experts. Better strategies for estimating import data from Canada are being explored.

TABLE 1  
SALIENT SULFUR STATISTICS<sup>1</sup>

(Thousand metric tons)

Period	Production			Shipments, all sources
	Petroleum <sup>2</sup>	Natural gas	Total	
2003:				
January-December	6,970 <sup>r</sup>	1,950	8,920 <sup>r</sup>	8,920 <sup>r</sup>
December	632 <sup>r</sup>	168	800 <sup>r</sup>	806 <sup>r</sup>
2004:				
January	585 <sup>r</sup>	165	749 <sup>r</sup>	769 <sup>r</sup>
February	526 <sup>r</sup>	155	680 <sup>r</sup>	690 <sup>r</sup>
March	597 <sup>r</sup>	176	773 <sup>r</sup>	782 <sup>r</sup>
April	612 <sup>r</sup>	161	773 <sup>r</sup>	772 <sup>r</sup>
May	614 <sup>r</sup>	170	784 <sup>r</sup>	780 <sup>r</sup>
June <sup>r</sup>	608	164	772	771
July	640 <sup>r</sup>	173	813 <sup>r</sup>	804 <sup>r</sup>
August	644 <sup>r</sup>	172	815 <sup>r</sup>	830 <sup>r</sup>
September	589 <sup>r</sup>	155	744 <sup>r</sup>	749 <sup>r</sup>
October	591 <sup>r</sup>	163	754 <sup>r</sup>	758 <sup>r</sup>
November <sup>r</sup>	612	167	779	761
December <sup>p</sup>	650	167	817	832
Total	7,270	1,990	9,250	9,300

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes a small quantity from coking operations.

TABLE 2  
U.S. IMPORTS OF SULFUR<sup>1</sup>

(Thousand metric tons and thousand dollars)

Period	Canada		Mexico		Total, all countries <sup>2</sup>	
	Quantity <sup>e</sup>	Value <sup>3</sup>	Quantity	Value <sup>3</sup>	Quantity <sup>e</sup>	Value <sup>3</sup>
2003:						
January-December	2,080	32,000	535	26,500	2,810	69,100
January-November	1,760	27,200	495	22,900	2,560	58,100
November	160	2,850	45	2,170	205	6,860
December	160	2,770	40	1,960	230	6,180
2004:						
January	180 <sup>r</sup>	1,720	50	2,400	267 <sup>r</sup>	5,850
February	160 <sup>r</sup>	3,130	35	3,050	225 <sup>r</sup>	7,930
March	180 <sup>r</sup>	3,660	25	2,570	225 <sup>r</sup>	7,210
April	180	3,060	54	2,550	279	8,040
May	180 <sup>r</sup>	2,830	57	2,680	265 <sup>r</sup>	6,880
June	180	2,560	49	2,440	247	5,980
July	160 <sup>r</sup>	2,790	54	2,550	251 <sup>r</sup>	7,150
August	160 <sup>r</sup>	2,050	35	1,780	221 <sup>r</sup>	5,290
September	160 <sup>r</sup>	2,460	49	2,620	240 <sup>r</sup>	6,850
October	160 <sup>r</sup>	1,740	51	2,170	220 <sup>r</sup>	4,370
November <sup>e</sup>	150	2,010	31	1,240	186	5,700
Total	1,850	26,000	490	26,100	2,630	71,200

<sup>e</sup>Estimated. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include other countries not listed.

<sup>3</sup>Declared customs valuation.

Sources: U.S. Census Bureau data as adjusted by U.S. Geological Survey and PentaSul North America Sulphur Service.

TABLE 3  
U.S. IMPORTS OF SULFURIC ACID<sup>1</sup>

(Thousand metric tons and thousand dollars)

Period	Canada			Europe			Total, all countries <sup>2</sup>		
	Quantity	Sulfur content	Value <sup>3</sup>	Quantity	Sulfur content	Value <sup>3</sup>	Quantity	Sulfur content	Value <sup>3</sup>
2003:									
January-December	387	126	16,200	266	86	5,870	905	298	28,800
January-November	346	113	14,400	246	79	5,140	830	273	25,900
November	33	11	1,590	1	(4)	36 <sup>e</sup>	71	23	3,350
December	41	13	1,880	20	7	734	75	25	2,900
2004:									
January	97	32	3,930	--	--	--	114	37	4,610
February	179	58	7,480	21	7	488	204	69	8,450
March	167	54	6,760	6	2	163	176	58	7,280
April	203	66	7,710	14	5	344	221	72	8,410
May	190	62	7,230	22	7	555	222	72	8,120
June	166	54	6,350	11	3	247	192	63	7,860
July	160	52	5,660	10	3	357	172	56	6,230
August	133	43	4,920	33	11	937	194	63	6,250
September	150	49	5,080	29	9	1,090	206	67	6,480
October	176	57	6,450	19	6	946	215	70	7,480
November	160	52	5,930	11	3	289	218	71	7,500
Total	1,780	579	67,500	176	56	6,010	2,130	698	78,700

<sup>e</sup>Estimated. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include other countries not listed.

<sup>3</sup>Declared customs valuation.

<sup>4</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 4  
U.S. EXPORTS OF SULFUR AND SULFURIC ACID<sup>1</sup>

(Thousand metric tons and thousand dollars)

Period	Sulfur		Sulfuric acid		
	Quantity	Value <sup>2</sup>	Quantity	Sulfur content	Value <sup>2</sup>
2003:					
January-December	742	46,100	207	68	18,800
January-November	674	32,200	196	64	17,500
November	27	4,880	12	4	1,170
December	67	3,920	12	4	1,360
2004:					
January	18	1,740	10	3	1,120
February	6	1,530	13	4	1,520
March	84	5,930	14	5	3,190
April	107	6,550	11	4	1,380
May	81	4,040	10	3	2,370
June	36	1,980	26	8	1,610
July	30	1,670	13	4	1,280
August	134	10,100	40	13	3,210
September	89	5,630	11	4	1,090
October	84	5,090	23	7	1,850
November	31	2,160	20	7	1,590
Total	700	46,400	191	62	20,200

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Declared f.a.s. (free alongside ship) valuation.

Source: U.S. Census Bureau.

TABLE 5  
U.S. CONSUMPTION OF SULFUR<sup>1</sup>

(Thousand metric tons)

Period	Domestic sources <sup>2</sup>	Imports <sup>c</sup>	Consumption
2003:			
January-December	8,170	2,810	11,000 <sup>r</sup>
January-October	7,430	2,580	10,000
November	756	205	961
December	739 <sup>r</sup>	230	969 <sup>r</sup>
2004:			
January <sup>f</sup>	751	267	1,020
February <sup>f</sup>	684	225	909
March <sup>f</sup>	698	225	923
April	665 <sup>r</sup>	279	944 <sup>r</sup>
May <sup>f</sup>	699	265	964
June	735 <sup>r</sup>	247	982 <sup>r</sup>
July <sup>f</sup>	774	251	1,030
August <sup>f</sup>	696	221	917
September <sup>f</sup>	660	240	900
October <sup>f</sup>	674	220	894
November	730	186	916
Total	7,770	2,630	10,400

<sup>c</sup>Estimated. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Calculated as shipments minus exports.

TABLE 6  
RECOVERED SULFUR PRODUCED AND SHIPPED IN THE UNITED STATES,  
BY PAD (PETROLEUM ADMINISTRATION FOR DEFENSE) DISTRICT<sup>1</sup>

(Thousand metric tons)

District and source	December 2004 <sup>p</sup>		November 2004		Total 2004 <sup>2</sup>		Year to date 2003 <sup>r,2</sup>	
	Production	Shipments	Production	Shipments	Production	Shipments	Production	Shipments
PAD 1:								
Petroleum and coke	20	20	19	18	236	238	229	232
Natural gas	2	2	2	2	21	21	26	26
Total	22	22	20	20	256	259	255	257
PAD 2:								
Petroleum and coke	76	79	82 <sup>r</sup>	82	855	870	904	896
Natural gas	4	4	4	3	43	43	44	44
Total	80	83	86 <sup>r</sup>	85	898	913	948	940
PAD 3: <sup>3</sup>								
Petroleum and coke	436	448	404 <sup>r</sup>	389 <sup>r</sup>	4,790	4,810	4,430	4,470
Natural gas	45	44	44 <sup>r</sup>	42	511	509	617	613
Total	480	492	448	431 <sup>r</sup>	5,300	5,320	5,050	5,080
PAD 4 and 5: <sup>4</sup>								
Petroleum and coke	117	118	107 <sup>r</sup>	108	1,390	1,400	1,410	1,380
Natural gas	116	117	118 <sup>r</sup>	117 <sup>r</sup>	1,410	1,410	1,260	1,260
California	84	82	84	82	932	926	983	965
Total	234	235	224 <sup>r</sup>	225 <sup>r</sup>	2,800	2,810	2,670	2,640
Grand total	817	832	779 <sup>r</sup>	761 <sup>r</sup>	9,250	9,300	8,920	8,920

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include revisions to prior months.

<sup>3</sup>Includes the U.S. Virgin Islands.

<sup>4</sup>Quantities produced and shipped in California included in petroleum and natural gas. California total shown for information purposes only.

TABLE 7  
COMPARATIVE SULFUR AND SULFURIC ACID STATISTICS<sup>1</sup>

(Million metric tons per year [annualized basis] and dollars per metric ton for period shown)

	2004			2003
	December	November	Year to date	total
Production	9.65	9.50 <sup>r</sup>	9.25	8.92
Shipments	9.82	9.28 <sup>r</sup>	9.30	8.92 <sup>r</sup>
Exports of sulfur	NA	0.38	0.76	0.74
Imports of sulfur:				
Canada	NA	1.83 <sup>e</sup>	2.02 <sup>e</sup>	2.08
Mexico	NA	0.38	0.54	0.54
Total <sup>2</sup>	NA	2.27 <sup>e</sup>	2.87 <sup>e</sup>	2.81
Exports of H <sub>2</sub> SO <sub>4</sub>	NA	0.24	0.21	0.21
Imports of H <sub>2</sub> SO <sub>4</sub> :				
Canada	NA	1.95	1.95	0.39
Europe	NA	0.13	0.19	0.27
Total <sup>2</sup>	NA	2.66	2.33	0.91
Consumption: <sup>3</sup>				
Domestic sources	NA	8.91	8.48	8.17 <sup>r</sup>
Imports	NA	2.27 <sup>e</sup>	2.87 <sup>e</sup>	2.81
Total	NA	11.20	11.40	11.00 <sup>r</sup>
Sulfur export values <sup>4</sup>	NA	\$70	\$66	\$62
Sulfur import values: <sup>4</sup>				
Canada	NA	\$13	\$14	\$15
Mexico	NA	\$40	\$53	\$50
Average	NA	\$31	\$27	\$25
H <sub>2</sub> SO <sub>4</sub> export values <sup>4</sup>	NA	\$79	\$106	\$91
H <sub>2</sub> SO <sub>4</sub> import values: <sup>4</sup>				
Canada	NA	\$37	\$38	\$42
Europe	NA	\$26	\$34	\$22
Average	NA	\$34	\$37	\$32

<sup>e</sup>Estimated. <sup>r</sup>Revised. NA Not available.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes other countries not listed.

<sup>3</sup>Because December trade data were not available, December consumption was not determined.

<sup>4</sup>Average value per ton for most recent data available.